



SEQUENCE LISTING

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LEUNG, SHUI-ON

<120> CHIMERIC, HUMAN AND HUMANIZED ANTI-GRANULOCYTE
ANTIBODIES AND METHODS OF USE

<130> 40923-0134US1

<140> 10/672,278
<141> 2003-09-29

<150> PCT/GB03/04229
<151> 2003-09-30

<150> 60/414,341
<151> 2002-09-30

<160> 51

<170> PatentIn Ver. 3.2

<210> 1
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino
acid sequence

<400> 1
Arg Ser Ser Gln Ser Ile Val His Ser Asn Gly Asn Thr Tyr Leu Glu
1 5 10 15

<210> 2
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino
acid sequence

<400> 2
Lys Val Ser Asn Arg Phe Ser
1 5

<210> 3
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 3
Phe Gln Gly Ser His Val Pro Pro Thr
1 5

<210> 4
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 4
Asn Tyr Gly Met Asn
1 5

<210> 5
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 5
Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe Lys
1 5 10 15

Gly

<210> 6
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Chimeric amino acid sequence

<400> 6
Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr
1 5 10

<210> 7
<211> 4

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<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      peptide

<220>
<221> MOD_RES
<222> (2)
<223> Lys (HSG)

<220>
<221> MOD_RES
<222> (4)
<223> Lys (HSG)

<220>
<223> c-term amidated

<400> 7
Phe Lys Tyr Lys
  1

<210> 8
<211> 392
<212> DNA
<213> Mus musculus

<220>
<221> CDS
<222> (1)..(339)

<400> 8
agc att gtg atg acc cag act cca ctc tcc ctg cct gtc agt ctt gga      48
Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
  1           5           10          15

gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt      96
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
  20          25          30

aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct      144
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
  35          40          45

cca aac ctc ctc atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca      192
Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
  50           55           60

gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc      240
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
  65           70           75           80

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agc aga gtg gag gct gag gat ctg gga gtt tat tac tgc ttt caa ggt Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly	288
85 90 95	
tca cat gtt cct ccg acg ttc ggt gga ggc acc aag ctg gaa atc aaa Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys	336
100 105 110	
cg ^g gctgatgctg caccaactgt atccatcttc ccaccatcca gtgaggatcc ggc Arg	392
<210> 9	
<211> 113	
<212> PRT	
<213> Mus musculus	
<400> 9	
Ser Ile Val Met Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	1 5 10 15
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	20 25 30
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	35 40 45
Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	50 55 60
Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	65 70 75 80
Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly	85 90 95
Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys	100 105 110
Arg	

<210> 10	
<211> 366	
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<213> Mus musculus	
<220>	
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<222> (1)..(366)	
<400> 10	
cag gtc caa ctg cag gag tct gga cct gag ctg aag aag cct gga gag Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu	1 5 10 15
	48

aca gtc aag ata tcc tgc aag gct tct ggg tat acc ttc aga aac tat	96
Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr	
20 25 30	
gga atg aac tgg gtg aaa cag gct cca gga aag ggt tta aag tgg atg	144
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met	
35 40 45	
ggc tgg ata aac acc tac act gga gag cca aca tat gct gat gac ttc	192
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe	
50 55 60	
aag gga cgg ttt gcc ttc tct ttg gaa acc tct gcc agc act gcc tat	240
Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr	
65 70 75 80	
ttg cag atc aac aac gtc aaa aat gag gac acg gct aca tat ttc tgt	288
Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys	
85 90 95	
gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg	336
Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp	
100 105 110	
ggc caa ggg acc acg gtc acc gtc tcc tca	366
Gly Gln Gly Thr Thr Val Thr Val Ser Ser	
115 120	
<210> 11	
<211> 122	
<212> PRT	
<213> Mus musculus	
<400> 11	
Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu	
1 5 10 15	
Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr	
20 25 30	
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met	
35 40 45	
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe	
50 55 60	
Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr	
65 70 75 80	
Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys	
85 90 95	
Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp	
100 105 110	

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 12

<211> 339

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Chimeric
 cMN3V_k nucleotide sequence

<220>

<221> CDS

<222> (1)..(339)

<400> 12

gac atc cag ctg acc cag act cca ctc tcc ctg cct gtc agt ctt gga	48
Asp Ile Gln Leu Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly	
1 5 10 15	

gat caa gcc tcc atc tct tgc aga tct agt cag agc att gta cat agt	96
Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser	
20 25 30	

aat gga aac acc tat tta gaa tgg tac ctg cag aaa cca ggc cag tct	144
Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser	
35 40 45	

cca aac ctc ctc atc tac aaa gtt tcc aac cga ttt tct ggg gtc cca	192
Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro	
50 55 60	

gac agg ttc agt ggc agt gga tca ggg aca gat ttc aca ctc aag atc	240
Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile	
65 70 75 80	

agc aga gtg gag gct gag gat ctg gga gtt tat tac tgc tttcaa ggt	288
Ser Arg Val Glu Ala Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly	
85 90 95	

tca cat gtt cct ccg acg ttc ggt gga ggc acc aag ctg gag atc aaa	336
Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys	
100 105 110	

cgt

Arg

339

<210> 13

<211> 113

<212> PRT

<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Chimeric
      cMN3Vk amino acid sequence

<400> 13
Asp Ile Gln Leu Thr Gln Thr Pro Leu Ser Leu Pro Val Ser Leu Gly
      1           5           10          15

Asp Gln Ala Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser
      20          25          30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
      35          40          45

Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
      50          55          60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
      65          70          75          80

Ser Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Phe Gln Gly
      85          90          95

Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Leu Glu Ile Lys
      100         105         110

Arg

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ggc tgg ata aac acc tac act gga gag cca aca tat gct gat gac ttc		192	
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe			
50	55	60	
aag gga cgg ttt gcc ttc tct ttg gaa acc tct gcc agc act gcc tat		240	
Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr			
65	70	75	80
ttg cag atc aac aac gtc aaa aat gag gac acg gct aca tat ttc tgt		288	
Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys			
85	90	95	
gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg		336	
Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp			
100	105	110	
ggc caa ggg acc acg gtc acc gtc tcc tca		366	
Gly Gln Gly Thr Thr Val Thr Val Ser Ser			
115	120		
<210> 15			
<211> 122			
<212> PRT			
<213> Artificial Sequence			
<220>			
<223> Description of Artificial Sequence: Chimeric			
cMN3VH amino acid sequence			
<400> 15			
Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu			
1	5	10	15
Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr			
20	25	30	
Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met			
35	40	45	
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe			
50	55	60	
Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr			
65	70	75	80
Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys			
85	90	95	
Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp			
100	105	110	
Gly Gln Gly Thr Thr Val Thr Val Ser Ser			
115	120		

<210> 16
<211> 108

<212> PRT
<213> *Homo sapiens*

<400> 16

Asp	Ile	Gln	Met	Thr	Gln	Ser	Pro	Ser	Ser	Leu	Ser	Ala	Ser	Val	Gly
1					5				10					15	

Asp Arg Val Thr Ile Thr Cys Gln Ala Ser Gln Asp Ile Ile Lys Tyr
20 25 30

Leu Asn Trp Tyr Gln Gln Thr Pro Gly Lys Ala Pro Lys Leu Leu Ile
35 40 45

Tyr Glu Ala Ser Asn Leu Gln Ala Gly Val Pro Ser Arg Phe Ser Gly
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Phe Thr Ile Ser Ser Leu Gln Pro
65 70 75 80

Glu Asp Ile Ala Thr Tyr Tyr Cys Gln Gln Tyr Gln Ser Leu Pro Tyr
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Gln Ile Thr Arg
100 105

<210> 17

<211> 113

<212> PRT

<213> Mus musculus

<400> 17

Asp Gln Ala Ser Ile Ser Cys Gln Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Leu Gln Lys Pro Gly Gln Ser
35 40 45

Pro Asn Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65 70 75 80

Ser Arg Val Glu Ala Glu Asp Ile Gly Val Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
 100 105 110

Arg

<210> 18
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Humanized
amino acid sequence

<400> 18
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1 5 10 15

Asp Arg Val Ser Ile Ser Cys Gln Ser Ser Gln Ser Ile Val His Ser
20 25 30

Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro Gly Lys Ala
35 40 45

Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro
50 55 60

Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile
65 70 75 80

Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Phe Gln Gly
85 90 95

Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Val Glu Ile Lys
100 105 110

Arg

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<210> 19
<211> 126
<212> PRT
<213> Homo sapiens

<400> 19
Pro Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1           5                   10                  15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Gly Thr Phe Ser Arg Ser
 20          25                   30

Ala Ile Ile Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
 35          40                   45

Gly Gly Ile Val Pro Met Phe Gly Pro Pro Asn Tyr Ala Gln Lys Phe
 50          55                   60

Gln Gly Arg Val Thr Ile Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr
 65          70                   75                  80

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Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys
85 90 95

Ala Gly Gly Tyr Gly Ile Tyr Ser Pro Glu Glu Tyr Asn Gly Gly Leu
100 105 110

Val Thr Val Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
115 120 125

<210> 20
<211> 122
<212> PRT
<213> *Mus musculus*

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<400> 20
Gln Val Gln Leu Gln Glu Ser Gly Pro Glu Leu Lys Lys Pro Gly Glu
      1           5           10          15

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Thr Val Lys Ile Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
20 25 30

Gly Met Asn Trp Val Lys Gln Ala Pro Gly Lys Gly Leu Lys Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Ser Leu Glu Thr Ser Ala Ser Thr Ala Tyr
 65 70 75 80

Leu Gln Ile Asn Asn Val Lys Asn Glu Asp Thr Ala Thr Tyr Phe Cys
85 90 95

Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
100 105 110

Gly Gln Gly Thr Thr Val Thr Val Ser Ser
115 120

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<210> 21
<211> 122
<212> PRT
<213> Artificial Sequence
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<220>
<223> Description of Artificial Sequence: Humanized
amino acid sequence

<400> 21

Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
20 25 30

Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
35 40 45

Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe
50 55 60

Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys
85 90 95

Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp
 100 105 110

Gly Gln Gly Thr Pro Val Thr Val Ser Ser
115 120

<210> 22

<211> 11

<212> PRT

<213> Homo sapiens

<400> 22

Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
1 5 10

<210> 23

<211> 534

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic nucleotide sequence encoding light chain amino acid sequence

<220>

<221> CDS

<222> (21)..(64)

<220>

<221> CDS

<222> (147)..(495)

<400> 23

tcttagacaca ggacctcacc atg gga tgg agc tgt atc atc ctc ttc ttg
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu
1 5 10

50

gta gca aca gct ac aggttaagggg ctcacagtag caggctttag gtctggacat
Val Ala Thr Ala Thr

104

atatatgggt gacaatgaca tccacttgc ctttctctcc ac a ggt gtc cac tcc Gly Val His Ser	159
gac atc cag ctg acc cag agc cca agc agc ctg agc gcc agc gtg ggt Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly 20 25 30 35	207
gac aga gtg tcc atc tct tgt aga tcc agt cag agc att gta cat agt Asp Arg Val Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile Val His Ser 40 45 50	255
aat gga aac acc tat tta gaa tgg tac cag cag aag cca ggt aag gct Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro Gly Lys Ala 55 60 65	303
cca aag ctg ctg atc tac aaa gtt tcc aac cga ttt tcc gga gtg cca Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser Gly Val Pro 70 75 80	351
gac aga ttc agc ggt agc ggt acc gac ttc acc ttc acc atc Asp Arg Phe Ser Gly Ser Gly Thr Asp Phe Thr Phe Thr Ile 85 90 95	399
agc agc ctc cag cca gag gac atc gcc acc tac tac tgc ttt caa ggt Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys Phe Gln Gly 100 105 110 115	447
tca cat gtt cct ccg acg ttc ggc ggc ggg acc aag gtg gag atc aaa Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Val Glu Ile Lys 120 125 130	495
cgtgagtaga atttaaactt tgcttcctca gttggatcc	534

<210> 24

<211> 131

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
light chain amino acid sequence

<400> 24

Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly
1 5 10 15Val His Ser Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala
20 25 30Ser Val Gly Asp Arg Val Ser Ile Ser Cys Arg Ser Ser Gln Ser Ile
35 40 45Val His Ser Asn Gly Asn Thr Tyr Leu Glu Trp Tyr Gln Gln Lys Pro
50 55 60

Gly Lys Ala Pro Lys Leu Leu Ile Tyr Lys Val Ser Asn Arg Phe Ser
 65 70 75 80

Gly Val Pro Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr
 85 90 95

Phe Thr Ile Ser Ser Leu Gln Pro Glu Asp Ile Ala Thr Tyr Tyr Cys
 100 105 110

Phe Gln Gly Ser His Val Pro Pro Thr Phe Gly Gly Thr Lys Val
 115 120 125

Glu Ile Lys
 130

<210> 25

<211> 729

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic
 nucleotide sequence encoding heavy chain amino
 acid sequence

<220>

<221> CDS

<222> (23)..(66)

<220>

<221> CDS

<222> (149)..(528)

<400> 25

ctcgaggcaca caggacacctca cc atg gga tgg agc tgt atc atc ctc ttc ttg
 Met Gly Trp Ser Cys Ile Ile Leu Phe Leu
 1 5 10

gta gca aca gct ac aggtaaagggg ctcacagtag caggcttgag gtctggacat
 Val Ala Thr Ala Thr
 15

atatatgggt gacaatgaca tccactttgc ctttctctcc ac a ggt gtc cac tcc
 Gly Val His Ser

cag gtc caa ctg cag cag tct gga gct gag gtc aag aag cct gga tct
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser
 20 25 30 35

agc gtc aag gtc tcc tgc aag gct tct ggg tat acc ttc aga aac tat
 Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Arg Asn Tyr
 40 45 50

gga atg aac tgg gtg aga cag gct cca gga cag ggt tta gag tgg atg

305

Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met			
55	60	65	
ggc tgg ata aac acc tac acc ggt gag cca aca tat gct gat gac ttc			353
Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala Asp Asp Phe			
70	75	80	
aag gga cgg ttt gcc ttc aca gcc gac gaa tct acc aac act gcc tat			401
Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn Thr Ala Tyr			
85	90	95	
atg gag ctg tct agc ttg aga tct gag gac acg gct ttc tat ttc tgt			449
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe Tyr Phe Cys			
100	105	110	115
gca aga aag gga tgg atg gat ttc aac ggt agt agc ctc gac tac tgg			497
Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu Asp Tyr Trp			
120	125	130	
ggc caa ggg acc ccg gtc acc gtc tcc tca ggtgagtcct tacaacctct			547
Gly Gln Gly Thr Pro Val Thr Val Ser Ser			
135	140		
ctctttatt cagcttaaat agatttact gcatttttg gggggaaat gtgtgtatct			607
gaatttcagg tcatgaagga ctagggacac cttgggagtc agaaagggtc attgggagcc			667
cgggctgatg cagacagaca tcctcagctc ccagacttca tggccagaga tttataaggat			727
cc			729
<210> 26			
<211> 141			
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<223> Description of Artificial Sequence: Synthetic			
heavy chain amino acid sequence			
<400> 26			
Met Gly Trp Ser Cys Ile Ile Leu Phe Leu Val Ala Thr Ala Thr Gly			
1	5	10	15
Val His Ser Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Val Lys Lys			
20	25	30	
Pro Gly Ser Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe			
35	40	45	
Arg Asn Tyr Gly Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu			
50	55	60	
Glu Trp Met Gly Trp Ile Asn Thr Tyr Thr Gly Glu Pro Thr Tyr Ala			
65	70	75	80

Asp Asp Phe Lys Gly Arg Phe Ala Phe Thr Ala Asp Glu Ser Thr Asn
 85 90 95

Thr Ala Tyr Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Phe
 100 105 110

Tyr Phe Cys Ala Arg Lys Gly Trp Met Asp Phe Asn Gly Ser Ser Leu
 115 120 125

Asp Tyr Trp Gly Gln Gly Thr Pro Val Thr Val Ser Ser
 130 135 140

<210> 27

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic linker

<400> 27

Gly Gly Gly Ser
 1

<210> 28

<211> 16

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 28

acagtcactg agctgg

16

<210> 29

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Synthetic primer

<400> 29

gccggatcct gactggatgg tggaaagatg gataca

36

<210> 30

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 30
gacattcagc tgacccagtc tcca 24

<210> 31
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 31
ctcaactggat ggtgggaaga tggatacagt tgg 33

<210> 32
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
primer

<400> 32
aggtsmarct gcagsagtcw gg 22

<210> 33
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
probe

<400> 33
agactgcagg agagctggga aggtgtgcac 30

<210> 34
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
probe

<400> 34
gaagcacacg actgaggcac ctccagatgt 30

<210> 35
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic linker

<400> 35
Gly Gly Gly Gly Ser Gly Gly Gly Ser Gly Gly Gly Ser
1 5 10 15

<210> 36
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<400> 36
Phe Lys Tyr Lys
1

<210> 37
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic peptide

<220>
<221> MOD_RES
<222> (1)
<223> Lys(DTPA)

<220>
<221> MOD_RES
<222> (3)
<223> Lys(DTPA)

<220>
<221> MOD_RES
<222> (4)
<223> Lys(Tscg-Cys); Cys not part of peptide backbone

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<220>
<223> c-term amidated

<400> 37
Lys Tyr Lys Lys
1

<210> 38
<211> 149
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 38
ggctcacccgg ttaggtgtt tatccagccc atccactcta aaccctgtcc tggagcctgt 60
ctcacccagg tcattccata gtttctgaag gtataacccag aagccttgca ggagacctg 120
acgctagatc caggcttctt gacctcagc                                149

<210> 39
<211> 149
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 39
tcgaggctac taccgttgaa atccatccat ccctttcttg cacagaata gaaagccgtg 60
tcctcagatc tcaagctaga cagctccata taggcagtgt tggttagattc gtcggctgt 120
aaggcaaacc gtccttgaa gtcatcagc                                149

<210> 40
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 40
ccaaactgcag cagtctggag ctgaggtaa gaagcct

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37

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<210> 41
<211> 20
<212> DNA
<213> Artificial Sequence

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<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 41
ggctcaccgg tgttaggttt                                         20

<210> 42
<211> 44
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 42
acctacaccg gtgagccaac atatgctgat gacttcaagg gacg           44

<210> 43
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 43
ggtgaccggg gtcccttggc cccagtagtc gaggctacta ccgttga        47

<210> 44
<211> 140
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 44
gaaaactttgt agatcagcag ctttggagcc ttacctggct tctgctggta ccattctaaa 60
taggtgtttc cattactatg tacaatgctc tgactggatc tacaagagat ggacactctg 120
tcacccacgc tggcgctcag                                         140

<210> 45
<211> 131
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

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<400> 45
ggccccggccg ccgaacgtcg gaggaacatg tgaaccttga aagcagtatg aggtggcgat 60
gtcctctggc tggaggctgc tgatggtaa ggtgaagtcg gtaccgctac cgctaccgct 120
gaatctgtct g 131

<210> 46
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 46
cagctgaccc agagcccaag cagcctgagc gccagcgtgg g 41

<210> 47
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 47
ctggcactcc ggaaaatcgg ttggaaactt tgttagatcag cag 43

<210> 48
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 48
caaccgattt tccggagtgc cagacagatt cagcggt 37

<210> 49
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
      oligonucleotide

<400> 49
gatctccacc ttggtcccgcc gcccgaacgt cg 33

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<210> 50
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
linker

<400> 50
agcttgcggc cgcc

13

<210> 51
<211> 13
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic
linker

<400> 51
gatcgccggcc gca

13